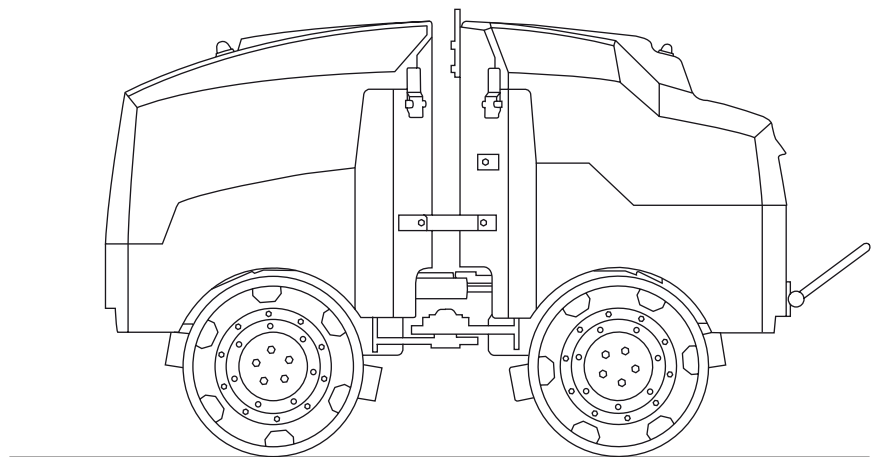


# ARR 1575

TRENCH ROLLER  
YANMAR 3TNV80F-SPAMM  
EU Stage V / U.S. EPA Tier 4f



## WORKSHOP MANUAL

EDITION 07/2021 EN  
Product Identification Number 3005077 -

**AMMANN**

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# **1 Introduction**

## **3 MACHINE DESCRIPTION**

## 4.4 Hydraulic oil



For the hydraulic system of the machine, it is necessary to use only high-quality hydraulic oil grades according to ISO VG 46 HVLP (corresponding to DIN 51524 part 3 HVLP).

Fill the machines normally with the ISO VG 46 hydraulic oil with a kinematic viscosity of 46 mm<sup>2</sup>/s at 40 °C (104 °F). This oil is the most suitable to be used in the widest range of ambient temperatures.

### Synthetic hydraulic oil

The hydraulic system can be filled with synthetic oil, which if leaks occur will be degraded completely by micro-organisms present in water and soil. Hydraulic oil on the basis of HE ester, HEES category according to ISO 15380, can only be used.



**Please consult always with oil manufacturer or dealer any switching from mineral oil to synthetic one or mixing the oils of various brands!**

## 4.5 Lubricating grease



For lubrication of the machine, use lubricants according to:

ISO 2137

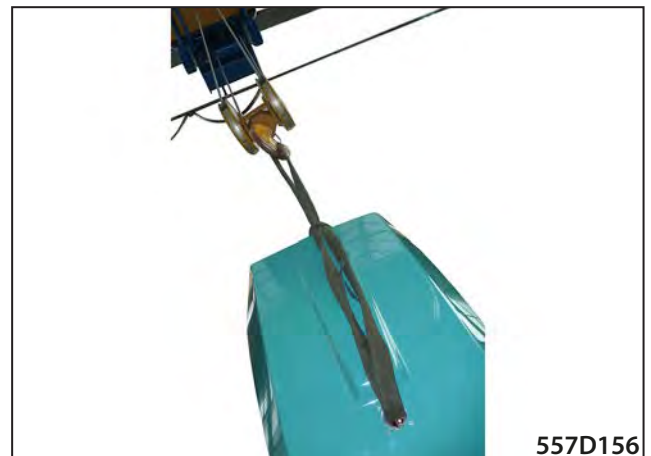
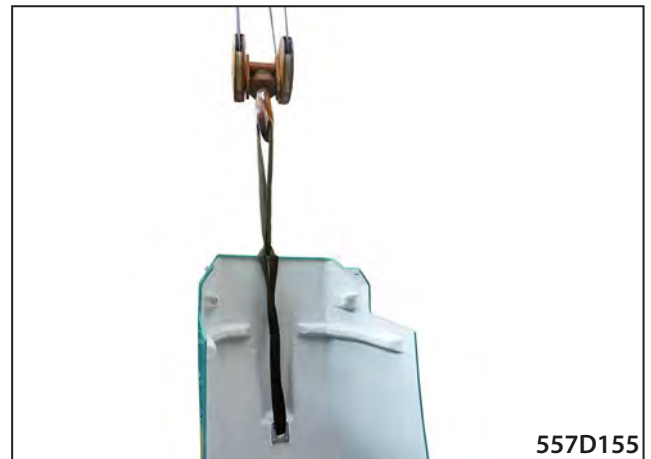
DIN 51 502

## 5.4.6 Front bonnet replacement

### Removal

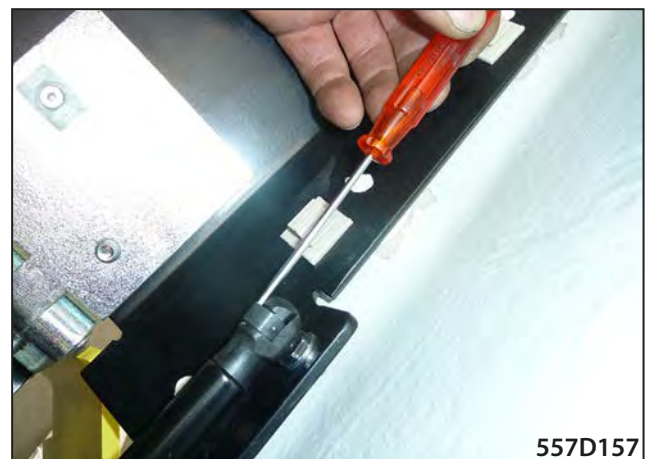
Remove the sensor (Chapter 5.4.6.2).

Hang the bonnet.



Use a screwdriver to lift the clamp.

Pull the gas cylinder away from the ball joints to the right and left.



Remove the rubber-metal element from the holder.



Apply blue adhesive on the rubber-metal element screw.



Mount the rubber-metal element into the holder.



Mount the lock ring using screws, washers and nuts.



Fasten the sensor harness using the holders.



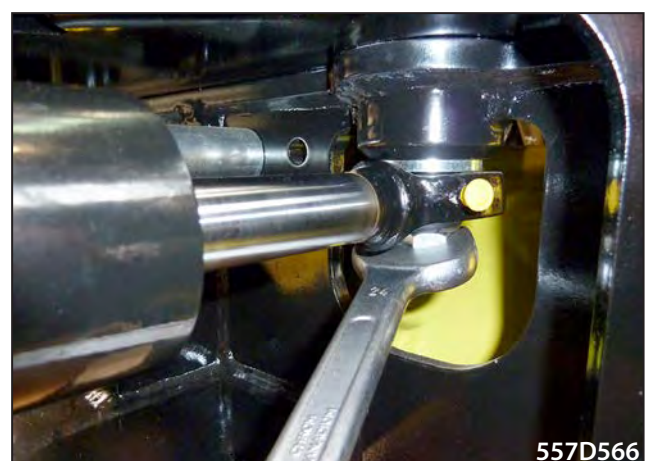
**5.4.9 Replacement of the steering piston**

**Removal**

Remove hydraulic hoses 017 and 018 from the hydraulic cylinder.



Remove the steering piston nuts.



Apply sealant on the sealing surface.



Pull the bearing flange to the support using the screws.



Lubricate the bearing pins.



## 5.6.6 Ventilation filter replacement

Remove the ventilation filter and replace it with a new one.



## 5.6.7 Hydraulic tank filling

Fill the hydraulic oil tank (approximately 16 l).



### 6.1.2 Error indication via LEDs on the display unit

#### Error indication (inclination switch)

Indication	Reason	Corrective action
Error lights up	The inclination switch activated. The roller is inclined by more than approx. 45° or overturned.	Set the machine upright.



If the roller overturns, the ignition deactivates for safety reasons.

The machine control is equipped with an inclination sensor. This sensor activates when the inclination angle exceeds 45°. The engine then

automatically turns off. After the sensor activates, the machine cannot be started.

If the machine is overturned, engine oil cannot reach the combustion chamber. Starting the engine after the machine is set upright again may cause engine damage.

Set the machine upright. Do not start the engine.

Contact a service workshop.

#### Error and Safety Bar indication

Indication	Reason	Corrective action
Error lights up	The switching transistor signals a status error. This means, for example, that a short circuit or broken cable has been detected.	Check that the cable is not short-circuited or broken.
The Error and Safety Bar indicator lamps are on simultaneously	The control unit of the machine waits until the "Oil Pressure" and "Alternator" inputs are in the basic position.	Check the Oil Pressure and Alternator outputs.



Pay attention to the indicator lamp priority: First the inclination switch, then "waiting" and finally the status error transistor.

#### Safety Bar indication

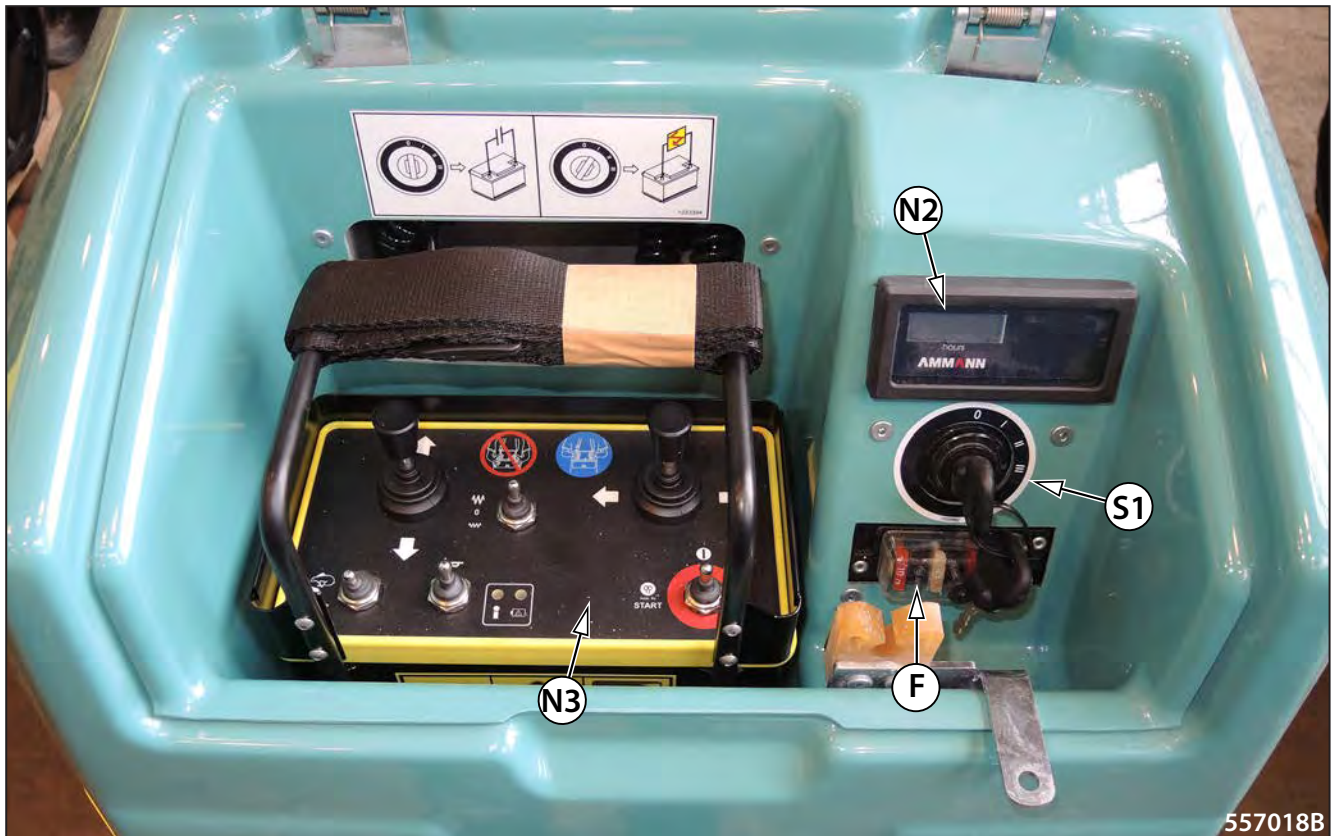
Indication	Reason	Corrective action
The Safety Bar indicator lamp is on	The safety bar switch activated.	Put the safety bar to the initial position.
The Safety Bar indicator lamp is flashing	Near halt detected.	Move at least 2.5 m away from the roller.
The Safety Bar indicator lamp is illuminated brightly	Near field detected.	If the roller is controlled using a cable, the user must be located in the so-called near field (at a distance of 2.5 to 4 m).



**CAUTION!**

Pay attention to the indicator lamp priority: First the safety bar switch, then near halt and finally near field.

6.3.4 Dashboard

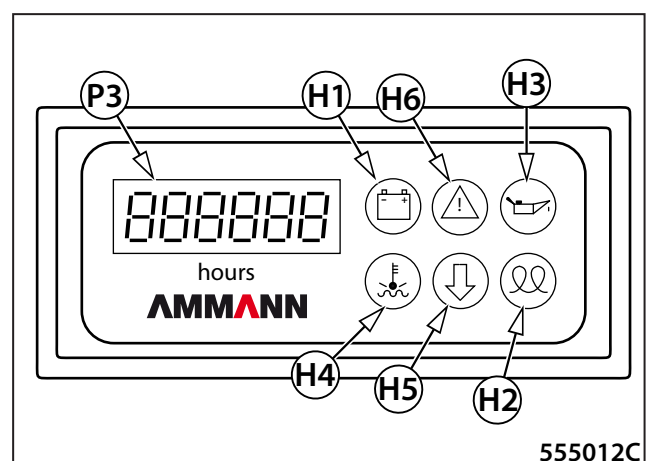


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	Functions
N2	Display unit
N3	Infrared light emitter
S1	Ignition box

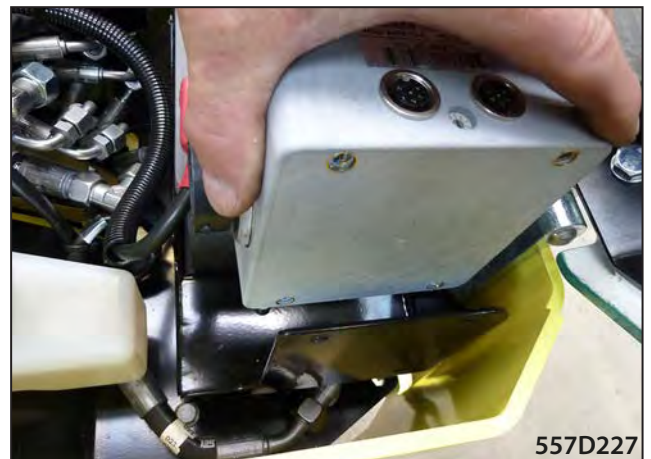
N2 display unit

	Functions
H1	Charging indicator lamp
H2	Preheating indicator lamp
H3	Oil pressure indicator lamp
H4	Water temperature indicator lamp
H5	Safety bar indicator lamp
H6	Error indicator lamp
P3	Operating hours counter



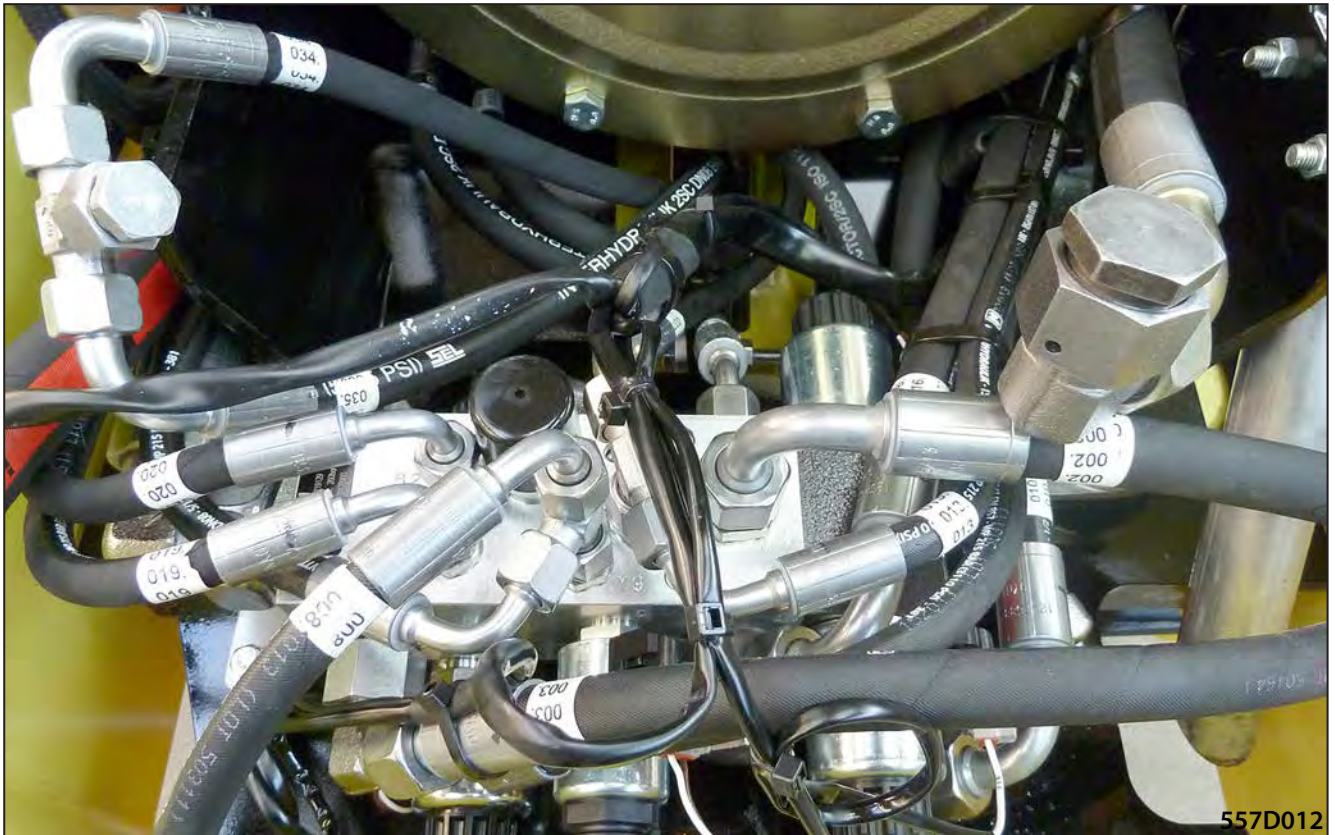
555012C

Remove the control unit fastening screws and remove the unit.



**7.2.3 Valve block hose**

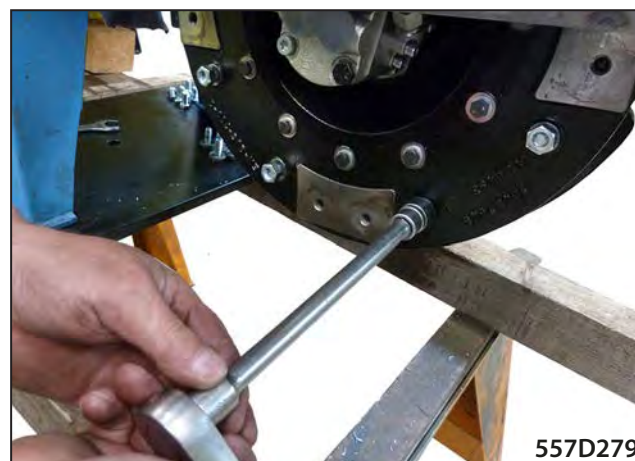
**Valve block – top view**



**Valve block – solenoid valves**

No.	from	to
2	Valve block P	Vibration – steering pump pressure – L neck
3	Valve block T2 – angled neck	Travel pump T1
4	Valve block T1 – angled neck	Hydraulic oil cooler – angled neck
7	Valve block PBR – L neck	Quantity divider T
8	Valve block PBR – L neck	Travel pump G – L neck
13	Valve block BR – T neck	Interface, rear
16	Valve block B1	Interface, rear – angled neck
17	Valve block B3	Left steering piston – cylinder
18	Valve block A3	Left steering piston – piston rod
19	Valve block A2	Right steering piston – cylinder
20	Valve block B2	Right steering piston – piston rod
30	Valve block A1	Vibration motor at the front, connection at the front
33	Valve block BR – T neck	Travel motor brake, front left – L neck
37	Valve block T3	Leaked oil – travel motor, front left – L neck

Remove the nuts on the gearbox cover.



Remove the gearbox and put it aside.



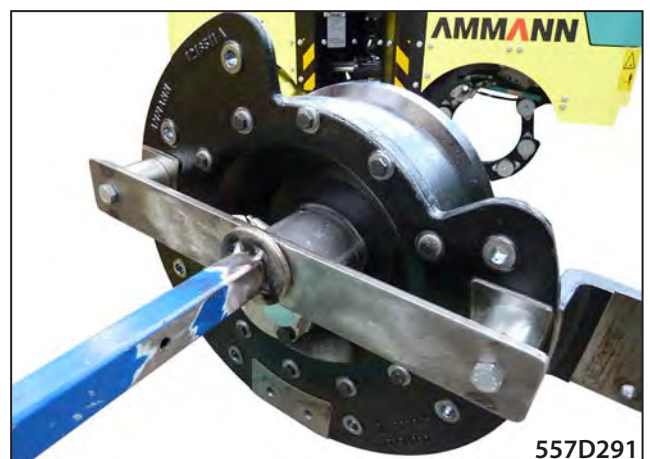
Apply blue adhesive on the rubber-metal element threads from the vibration motor side.



Support the hoses with squared wood on the vibration motor side so that they can be released.



Attach the gearbox to a crane using the aid.



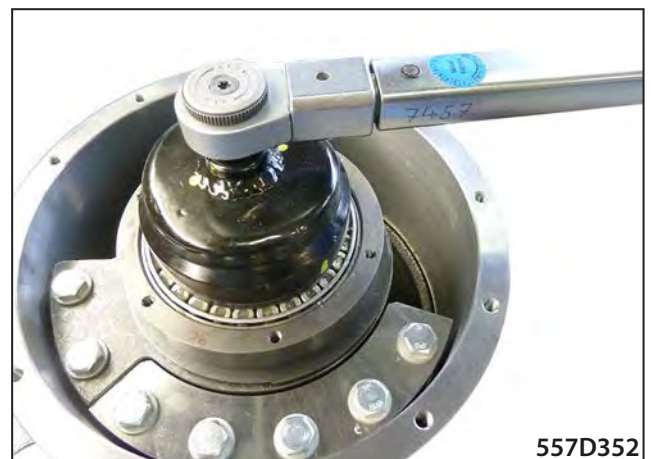
Mount the grooved nut.



Mount the special "spanner for grooved nuts" tool.



Tighten firmly (200 Nm).



Install the bridge for the torque meter.



On the removed travel motor, remove all screw unions.



Remove the screws on the travel hydraulic motor flange.

The screws are inaccessible:

In rare cases (7x) where bolts are not accessible, the travel hydraulic motor flange must be completely removed. You then have to remove (5x) hexagon bolts. Lift the flange from the travel motor.



Screw two eye screws in the travel motor flange.



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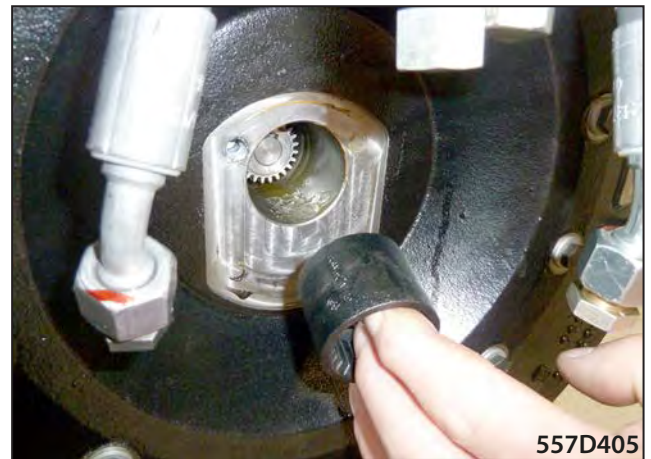
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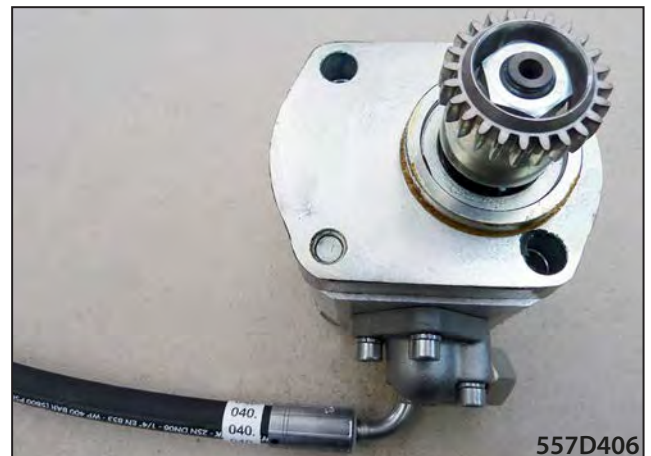
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Remove the clutch.



In the case of a defective vibration hydraulic motor, remove the screw union and pinion.



Remove the pinion nut.



Remove the pinion using a pulling tool.



8.3 ACEecon

Removal

Remove the rear drum scrapers.



## **9 Front axle (not included in the machine equipment)**

Close the screw union.



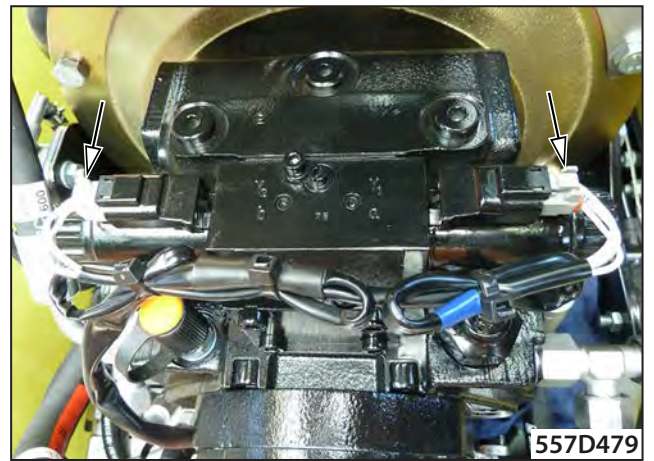
Remove the suction line, vibration pump screw union.



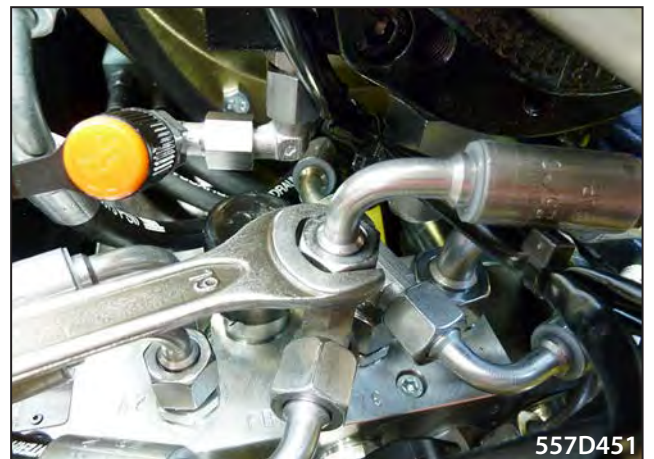
Close the screw union.



Connect connectors Y3 and Y4.



Mount the hydraulic hose of the supply pressure, PBR valve block.



## Max. pressure – brake, max. pressure – vibration

You can set the brake drain valve if necessary.



You can set the vibration drain valve if necessary.



Magnetic valves can be activated manually.



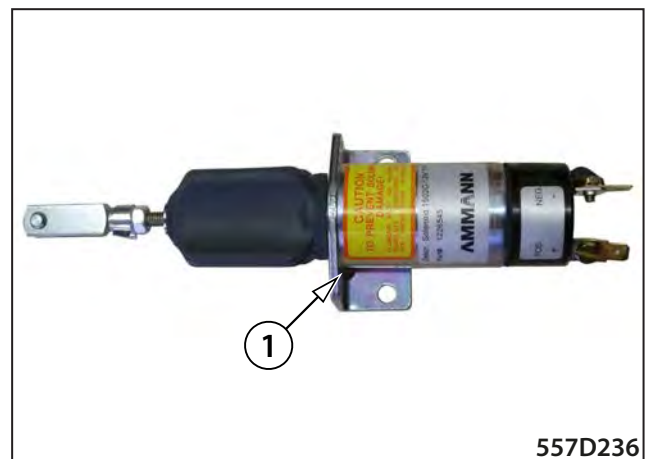
Screw the control screw back to the length of 32 mm (1.26 inch).  
Use a calliper to check the correct length of extension of the screw.

**Note:**

If the control screw is adjusted to a length shorter than 32 mm (1.26 inch), problems with setting of correct speed may occur.



Preassembled speed magnet (1).



Apply blue adhesive on the screws.



# 14 Cooling

**15.3.3.1 Battery replacement**

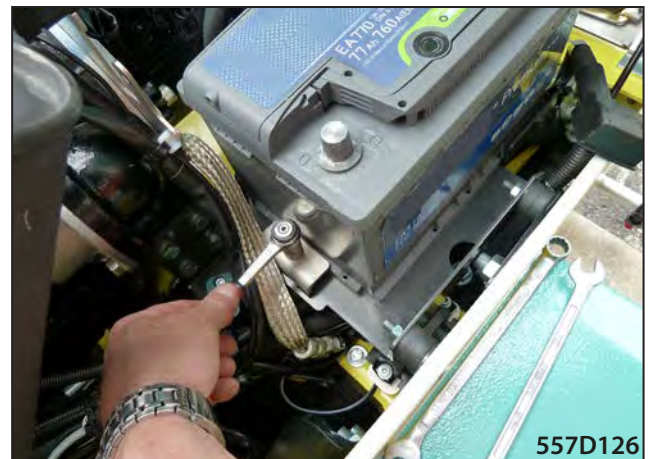
Loosen the (-) clamp and remove it.



Loosen the (+) clamp and remove it.



Loosen the holding angle piece and remove it.



Lift the battery from the machine area.

Insert a new battery.

Connect the battery.

Start with the (+) clamp.



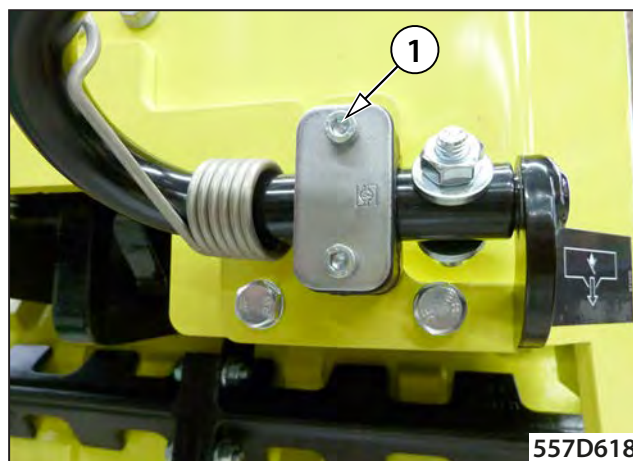
**Battery poles and clamps must be clean. If they show a coat of sulphate (whitish or greenish), they must be cleaned.**



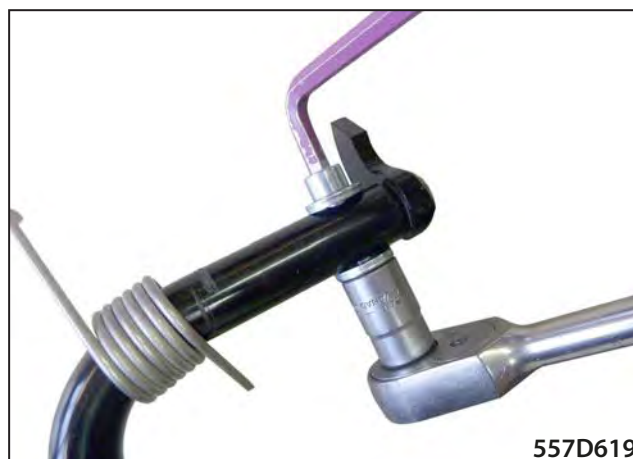
**16.2 Safety bar**

**16.2.1 Safety bar replacement**

Remove the screws (1) on the clip body.  
Remove the safety bar from the chassis.



Right side, remove the screw on the safety bar.



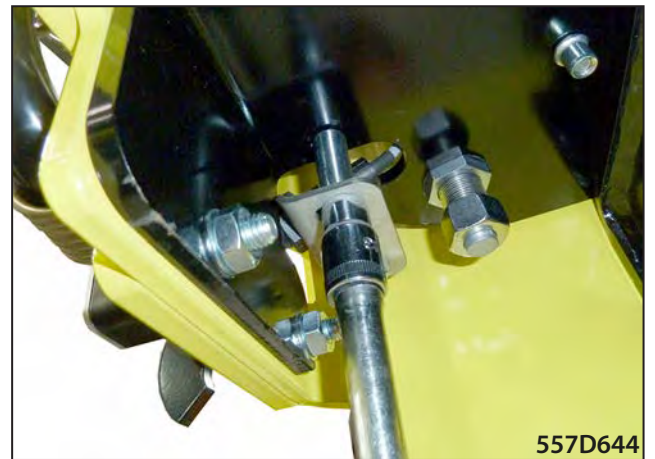
Remove the stop on the right.



Remove the spring.



Tighten the screws to a torque of 25 Nm.



Connect the sensor cable.  
Fasten the connector with a cable tie.



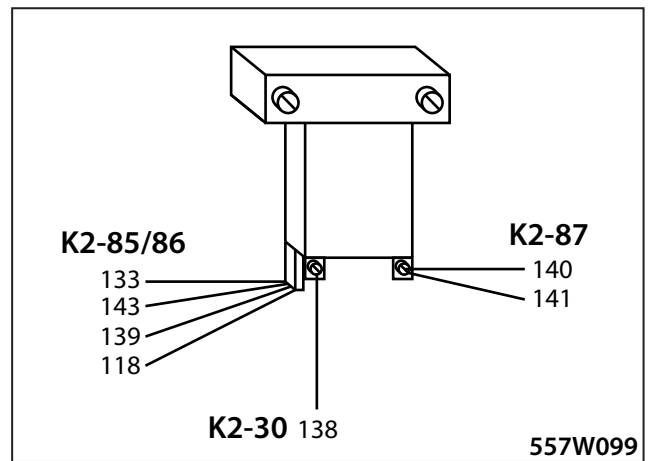
Function check, safety bar at the top: The "Safety Bar" indicator lamp (1) must be on.



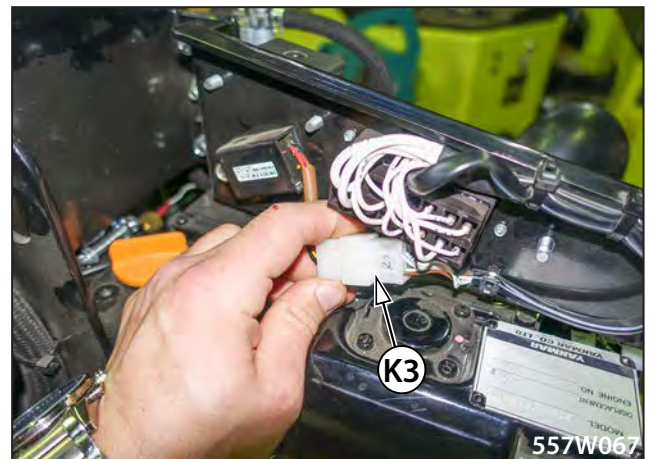
Function check, safety bar at the bottom: The "Safety Bar" indicator lamp (1) must be off.



K2 relay – Conductor layout



K3 – Time relay



K4 – Relay – Pull solenoid



**18.1.2 The engine does not start**

The following description applies to starting using the ignition lock: If the machine cannot be started using only the manual control, refer to the next chapter.

**Defect description, the engine does not start**

<b>Defect description</b>	<b>Probable cause</b>	<b>Check</b>
The engine does not start	G2 battery	Is the battery voltage OK? Battery terminals? Battery cable on the terminals?
The starter does not rotate	S1 ignition	Can the engine be started by ignition? -> Control does not work.
	F11 fuse	Is F11 OK?
	N1 control unit	Is the connector connected?
	K1 relay	The relay must close when the ignition turns on.
	F22 fuse	Is F22 OK?
	G1 alternator	Is the connector connected? With the ignition turned on, the connection must be D+=0V. Is the connector correctly connected? Relay checked?
	K2 ignition relay M1 engine starter	With the ignition in the Start position, the connection must be 50 + 12 V.
The engine does not start	M2 diesel fuel pump	Is there enough diesel in the tank? Is the diesel fuel pump working?
The starter rotates But the engine does not start	F21 fuse	Is the F21 fuse OK?
	S21 engine oil pressure switch	If the motor is stopped, the switch must be closed. Is F12 OK?
	F12 fuse	When the starter rotates, there must be +12 V on Y1 (red).
	N1 control unit	Is the connector connected?
	K3 timer	Is the connector connected? Relay checked?
	K4 relay	For the 50 starting position, the input coil (white) must be +12 V for 1 s.
The engine starts but runs only for approx. 4 s	S22 water temperature switch	At normal operating temperature, the switch must be open. Grounding? Is the connector firmly connected? Corrosion-free?
	S21 engine oil pressure switch	When starting, the switch must be closed. When the engine is running, it must be open. Is the connector firmly connected? Corrosion-free?
Preheating does not work	R1 preheating plug	In cold weather, please also check the preheating system. In the preheating ignition position, the H2 indicator lamp must be on and there must be +12 V on the glow plug.
	F24 fuse	Is F24 OK?
	K6 relay	Is the connector connected? Relay checked?
Yanmar engine (Yanmar TNVDI, service manual)	Diesel	Diesel in the tank? Passable diesel inlet? Air in the injection system? Passable filter? Air in the system? "Smoke signals" on the exhaust pipe? Compression, injection system, valve clearance? Is the fuel pump working? Is F22 OK?

**Fault: The machine moves only forward**

Probable cause: Safety bar S24 sensor

Check: Check the correct position of the magnet on the safety bar.

**Fault: The machine moves only forward**

Probable cause: Travel pump Y3, Y4

Check: Check that the connectors are connected.



**Fault: The machine moves too slowly**

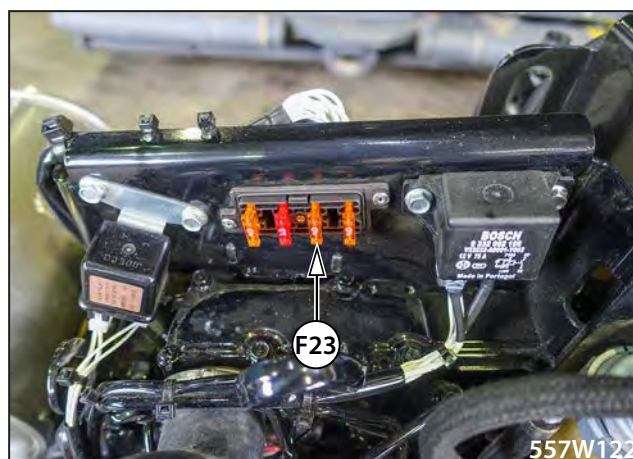
Probable cause: Infra-red N3 remote control

Check: Check that the green LED is flashing when you engage the transport gear.

**Fault: The machine moves too slowly**

Probable cause: F23 fuse

Check: Check F23 fuse.



### 18.2.2 Checking the steering pressure

Turn the machine to the limit position.

Hold the lever pressed throughout the entire further procedure.

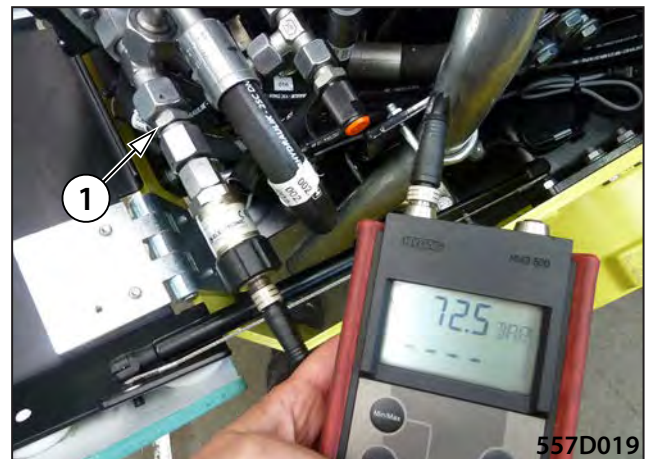


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Measurement point (1) Vibration/steering pressure.

If a steering pressure of  $67 \pm 7$  bar is not reached:

- remove the right steering piston line and pressure-close it.
- remove the left steering piston line and pressure-close it.
- remove the valve block, see "Replacement of the valve block" (Chapter 11.2.2).
- check the steering pressure relief valve.



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**18.2.7.1 Checking the travel pump magnetic coil / travel pump servo block**

The travel pump magnetic coil cannot be controlled mechanically.



Loosen the knurled nut.



Remove the magnetic coil.



Screw out the magnetic valve.



18.3 Roller overturning



Place the machine on belts as quickly as possible.  
 Turn off the ignition (0 position).  
 Wait 24 hours.  
 Turn the engine twice using the starter.



**Never try to immediately start the engine!**  
**Prevent oil shock!**  
**It can result in serious engine damage!**



**Operating fluids pose a risk to the environment!**  
**Prevent fluids from leaking into sewage systems, soil or the environment.**  
**Immediately collect any leaked liquids, oil, diesel fuel, anti-freeze agent, battery sulphur!**

## **19.1 Hydraulic system**

### **19.1.1 Adjustment of the travel pump zero position**

Adjustment of the travel pump zero position (Chapter 18.2.7).

#### **19.1.1.1 Checking the travel pump magnetic coil / travel pump servo block**

Checking the travel pump magnetic coil / travel pump servo block (Chapter 18.2.7.1).

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